October 24, 2013

MEMORANDUM

SUBJECT: Review of the Conceptual Site Model and Proposed Decision Unit Plan for the Arkwood, Inc. Superfund site.

FROM: Ghassan A. Khoury, MSPH, Sc.D.

Toxicologist/Risk Assessor

TO: Stephen Tzone, RPM

The Conceptual Site Model and Proposed Decision Unit Plan for the Arkwood, Inc. Superfund site was reviewed and the following are my comments.

1. It is reported that Figure 6 provides a summary diagram of the CSM assuming industrial use in the future for both the Site and the adjacent railroad ditch area.

   The potential development of an industrial complex in the future on any portion of the Site is not properly addressed. A 6 inch soil cover cap over dioxin contaminated soil will not preclude digging out the contaminated soil and spreading it over the surface when an industrial complex is built in the future. All post-excavation confirmation soil sampling for dioxin, except for one sample, conducted at the Site in 1995 prior to final grading and installation of a 6-inch clean soil cap exceeded the soil preliminary remediation goal (PRG) for dioxin of 0.665 ppb for a worker scenario. A risk assessment need to be developed irrespective of any institutional controls where by dioxin levels found at 6 inches and below are used as an exposure point concentration for a future worker land use scenario. After determining risk to a worker, then risk management decision will be made as to whether future industrial land use is suitable or further remediation is needed or claim the land unsuitable for future industrial land use development.

2. A DU need to be developed to address the future worker scenario on the Site as mentioned in comment No. 1. An upper confidence limit on the arithmetic mean need to be developed for the DU sampling plan.
3. Figure 7 denotes an area which seems to be part of the site as a background area. Figure 5 shows that two samples C2 and C3 collected at the area bordering the proposed background area have dioxin soil level of between 5 ppb and 7.5 ppb. An appropriate background up-gradient from the Site need to be selected.

4. The conceptual site model should include leaching of contaminants in soil into the groundwater. Evaluation of this pathway should be addressed.
5. Table 1 provides dioxin levels in soil samples collected in 1995 and 2012. A factor of 0.78 was developed based on the 2012 samples to adjust TEFs from International TEFs to the WHO TEFs. In the risk assessment you should show the congeners for each dioxin sample and then apply the new WHO TEFs. Do not use a correction factor of 0.78.